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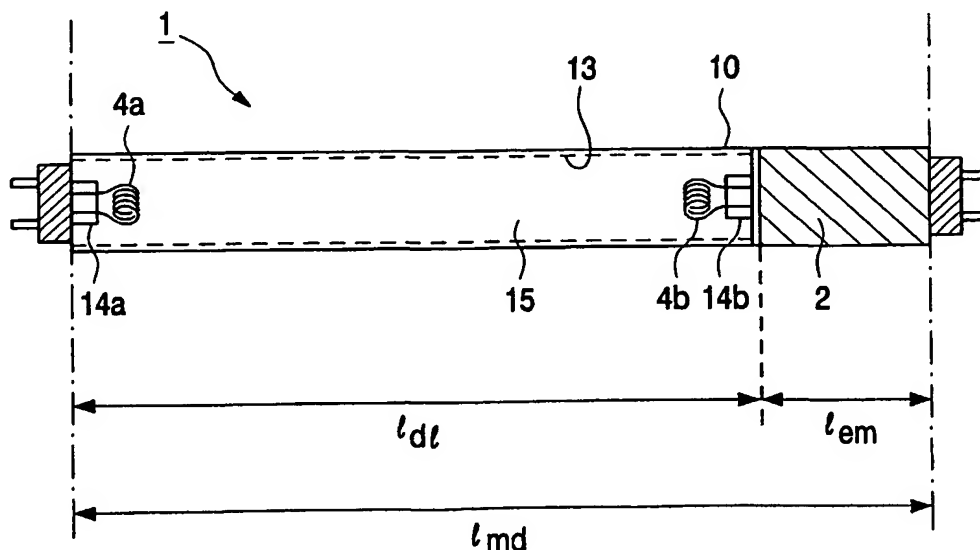
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[Continued on next page]

(54) Title: ASSEMBLY OF A FLUORESCENT LAMP AND AN EXTENSION MEANS



(57) Abstract: An energy-saving assembly of an elongate low-pressure mercury vapor discharge lamp (1) and at least one elongate extension means (2). The low-pressure mercury vapor discharge lamp comprises a light-transmitting discharge vessel (10) enclosing, in a gastight manner, a discharge space (15) provided with a filling of mercury and a rare gas mixture. The rare gas mixture comprises at least 50% by volume of krypton. The discharge vessel is provided with a luminescent layer (13). Electrodes (4a; 4b) are arranged in the discharge space for maintaining a discharge in the discharge space. The extension means are provided for connection to the low-pressure mercury vapor discharge lamp. The extension means comprises an inductance (3). The length of the low-pressure mercury vapor discharge lamp together with the length of the extension means is adapted to fit a pre-determined mounting distance of low-pressure mercury vapor discharge lamps.



**Declaration under Rule 4.17:**

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

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## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 H01J61/56 H01J61/16 H01R33/08 H01R33/94 H01R33/945  
 F21V19/00 H05B41/232

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4 758 173 A (NORTHROP DONALD) 19 July 1988 (1988-07-19)	1-7
X	abstract column 2, line 53 - column 7, line 62; figures	15
Y	US 5 247 228 A (ROCHE WILLIAM J) 21 September 1993 (1993-09-21)	1-7
X	abstract column 3, line 28 - column 5, line 64; figures 1-3	14
X	US 6 400 097 B1 (JIN FENG ET AL) 4 June 2002 (2002-06-04)	14
Y	abstract column 2, line 20 - column 6, line 55; figure 1	1,3,5
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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 780 329 A (HOMMO M ET AL) 18 December 1973 (1973-12-18)	14
Y	abstract figure 3; examples 1-4	1,3,5
X	US 4 163 176 A (BESSONE CARLO S ET AL) 31 July 1979 (1979-07-31) cited in the application	15
Y	abstract column 1; line 43 - column 2, line 40; figures 1,2	1,4,6
X	US 5 904 415 A (ECKELS PAUL ET AL) 18 May 1999 (1999-05-18)	15
Y	abstract column 4, line 9 - column 5, line 40; figures 1-3,7	1
X	EP 1 094 690 A (MATSUSHITA ELECTRIC IND CO LTD) 25 April 2001 (2001-04-25)	15
Y	abstract paragraph [0030] - paragraph [0062]; figures 1,4a,5a,13; table 1	1,2,6

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB2004/050471

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4758173	A	19-07-1988	NONE	
US 5247228	A	21-09-1993	NONE	
US 6400097	B1	04-06-2002	EP 1304721 A1 JP 2003162975 A	23-04-2003 06-06-2003
US 3780329	A	18-12-1973	JP 48061678 U CA 971214 A1 DE 2255165 A1 FR 2159505 A1 GB 1405153 A	06-08-1973 15-07-1975 17-05-1973 22-06-1973 03-09-1975
US 4163176	A	31-07-1979	BE 870813 A1 CA 1132185 A1 DE 2843525 A1 FR 2405556 A1 GB 2006517 A ,B JP 54062374 U NL 7810099 A ,C	15-01-1979 21-09-1982 12-04-1979 04-05-1979 02-05-1979 01-05-1979 10-04-1979
US 5904415	A	18-05-1999	NONE	
EP 1094690	A	25-04-2001	JP 3278429 B2 JP 2001189150 A CN 1303120 A EP 1094690 A2 US 6504305 B1	30-04-2002 10-07-2001 11-07-2001 25-04-2001 07-01-2003